



PTO/SB/08a/b (08-03)

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Substitute for form 1449A/B/PTO

Complete if Known**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

				Complete if Known
Application Number				10/722,689
Filing Date				November 24, 2003
First Named Inventor				Stevenson, Mario
Art Unit				1645
Examiner Name				Not Yet Assigned
Sheet	1	of	5	Attorney Docket Number
				UMY-034

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
PJ	A1	5,866,698	02-02-1999	Ecker, et al.	
	A2	2003/005944 A1	03-27-2003	Lois-Caballe, et al.	
	A3	6,573,099 B2	06-03-2003	Graham	
	A4	2003/0124513 A1	07-03-2003	McSwiggen	
	A5	2003/0157691 A1	08-21-2003	Qin, et al.	
	A6	2003/0175950 A1	09-18-2003	McSwiggen	
	A7	2003/0203868 A1	10-30-2003	Bushmann, et al.	
PJ	A8	2003/0206887 A1	11-06-2003	Morrissey, et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
PJ	A9	WO 97/31642	09-04-1997	Akira Kaji		
	A10	WO 97/46673	12-11-1997	Novartis		
	A11	WO 98/04686	02-05-1998	Day, Robert, et al.		
	A12	WO 98/25630	06-18-1998	State University of New York		
	A13	WO 99/41355	08-19-1999	State University of New York		
	A14	WO 00/31271	06-02-2000	Hismitsu Pharmaceutical Co.		
	A15	WO 01/90347	11-29-2001	Syngenix Ltd.		
	A16	EP 1 214 945 A2	06-19-2002	RiboPharma AG		
	A17	WO 02/068582	09-06-2002	Dongbu Hannong Chemical		
	A18	WO 03/033700 A1	04-24-2003	RiboPharma AG		
PJ	A19	EP 1 352 960.A1	10-15-2003	Viruvation BV		

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NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
PJ	A20	Adelman ZN, Sanchez-Vargas I, Travanty EA, Carlson JO, Beatty BJ, Blair CD, Olson KE. RNA silencing of dengue virus type 2 replication in transformed C6/36 mosquito cells transcribing an inverted-repeat RNA derived from the virus genome. J Virol. 2002 Dec;76(24):12925-33.	

Examiner Signature	<i>Rene</i>	Date Considered	2/9/07
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RS	B1	Boden D, Pusch O, Lee F, Tucker L, Shank PR, Ramratnam B. Promoter choice affects the potency of HIV-1 specific RNA interference. Nucleic Acids Res. 2003 Sep 1;31(17):5033-8.			T ²
	B2	Boden D, Pusch O, Lee F, Tucker L, Ramratnam B. Human immunodeficiency virus type 1 escape from RNA interference. J Virol. 2003 Nov;77(21):11531-5.			
	B3	Bradbury, Jane. RNAi is successful as an antiviral in proof of principle experiments. The Lancet. June 29:359:2257, 2002.			
	B4	Caplen NJ, Zheng Z, Falgout B, Morgan RA. Inhibition of viral gene expression and replication in mosquito cells by dsRNA-triggered RNA interference. Mol Ther. 2002 Aug;6(2):243-51.			
	B5	Chang J, Taylor JM. Susceptibility of human hepatitis delta virus RNAs to small interfering RNA action. J Virol. 2003 Sep;77(17):9728-31.			
RS	B6	Coburn GA, Cullen BR. Potent and specific inhibition of human immunodeficiency virus type 1 replication by RNA interference. J Virol. 2002 Sep;76(18):9225-31.			
	B7	Couzin J. RNA interference. Mini RNA molecules shield mouse liver from hepatitis. Science. 2003 Feb 14;299(5609):995.			
	B8	Dector MA, Romero P, Lopez S, Arias CF. Rotavirus gene silencing by small interfering RNAs. EMBO Rep. 2002 Dec;3(12):1175-80.			
	B9	Desai, Sena. RNA Technology Thwarts HIV. News from Harvard Medical, Dental & Public Health Schools. June 21, 2002; Retrieved from the internet: www.focus.hms.harvard.edu/2002/june21_2002/research_briefs.html.			
	B10	Garber, Ken. Prescription RNA. Technology Review. December 2002/January 2003. pp. 42-48.			
	B11	Ge Q, McManus MT, Nguyen T, Shen CH, Sharp PA, Eisen HN, Chen J. RNA interference of influenza virus production by directly targeting mRNA for degradation and indirectly inhibiting all viral RNA transcription. Proc Natl Acad Sci U S A. 2003 Mar 4;100(5):2718-23. Epub 2003 Feb 19.			
	B12	Gitlin L, Karelsky S, Andino R. Short interfering RNA confers intracellular antiviral immunity in human cells. Nature. 2002 Jul 25;418(6896):430-4. Epub 2002 Jun 26.			
	B13	Gitlin L, Andino R. Nucleic acid-based immune system: the antiviral potential of mammalian RNA silencing. J Virol. 2003 Jul;77(13):7159-65.			
	B14	Gummuluru S, Emerman M. Advances in HIV molecular biology. AIDS. 2002;16 Suppl 4:S17-23.			
	B15	Hall AH, Alexander KA. RNA interference of human papillomavirus type 18 E6 and E7 induces senescence in HeLa cells. J Virol. 2003 May;77(10):6066-9.			
	B16	Hu WY, Myers CP, Kilzer JM, Pfaff SL, Bushman FD. Inhibition of retroviral pathogenesis by RNA interference. Curr Biol. 2002 Aug 6;12(15):1301-11.			
RS	B17	Hutvagner G, McLachlan J, Pasquinelli AE, Balint E, Tuschi T, Zamore PD. A cellular function for the RNA-interference enzyme Dicer in the maturation of the let-7 small temporal RNA. Science. 2001 Aug 3;293(5531):834-8. Epub 2001 Jul 12.			

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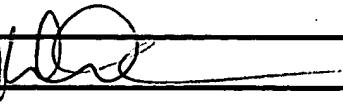
NON PATENT LITERATURE DOCUMENTS					
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	C1	Hutvagner G, Zamore PD. A microRNA in a multiple-turnover RNAi enzyme complex. Science. 2002 Sep 20;297(5589):2056-60. Epub 2002 Aug 01.			
	C2	J.T. Lab tool may spawn new antiviral drugs. Science News. 2002 August;162:93-94.			
	C3	Jacque JM, Triques K, Stevenson M. Modulation of HIV-1 replication by RNA interference. Nature. 2002 Jul 25;418(6896):435-7. Epub 2002 Jun 26.			
	C4	Joost Haasnoot PC, Cupac D, Berkhouit B. Inhibition of virus replication by RNA interference. J Biomed Sci. 2003;10(6 Pt 1):607-16.			
	C5	Lawrence D. RNAi could hold promise in the treatment of HIV. Lancet. 2002 Jun 8;359(9322):2007.			
	C6	Lee NS, Dohjima T, Bauer G, Li H, Li MJ, Ehsani A, Salvaterra P, Rossi J. Expression of small interfering RNAs targeted against HIV-1 rev transcripts in human cells. Nat Biotechnol. 2002 May;20(5):500-5.			
	C7	Leff, David. Interacting Ribonucleic Acid Plus Little Known Dicer Enzyme Knock Down HIV, with Therapeutic Intent. Bio World Today. 2002 June;13(123):1,7.			
	C8	Liang XZ, Lucy AP, Ding SW, Wong SM. The p23 protein of hibiscus chlorotic ringspot virus is indispensable for host-specific replication. J Virol. 2002 Dec;76(23):12312-9.			
	C9	Liang X, Zhou Y, Lian J, Nie Q, Jia Z. Effect of inhibitor RNA on intracellular inhibition of viral gene expression in 5'-noncoding region of hepatitis C virus. Zhonghua Nei Ke Za Zhi. 2002 Oct;41(10):660-2. Chinese.			
	C10	Lin SL, Sukasweang S, Chuong CM, Rasheed S, Ying SY. D-RNAi (messenger RNA-antisense DNA interference) as a novel defense system against cancer and viral infections. Curr Cancer Drug Targets. 2001 Nov;1(3):241-7.			
	C11	Lindenbach BD, Rice CM. RNAi targeting an animal virus: news from the front. Mol Cell. 2002 May;9(5):925-7.			
	C12	Martinez MA, Gutierrez A, Armand-Ugon M, Blanco J, Parera M, Gomez J, Clotet B, Este JA. Suppression of chemokine receptor expression by RNA interference allows for inhibition of HIV-1 replication. AIDS. 2002 Dec 6;16(18):2385-90.			
	C13	Martinez MA, Clotet B, Este JA. RNA interference of HIV replication. Trends Immunol. 2002 Dec;23(12):559-61.			
	C14	McCaffrey AP, Meuse L, Pham TT, Conklin DS, Hannon GJ, Kay MA. RNA interference in adult mice. Nature. 2002 Jul 4;418(6893):38-9.			
	C15	Novina CD, Murray MF, Dykxhoorn DM, Beresford PJ, Riess J, Lee SK, Collman RG, Lieberman J, Shankar P, Sharp PA. siRNA-directed inhibition of HIV-1 infection. Nat Med. 2002 Jul;8(7):681-6. Epub 2002 Jun 03.			
	C16	Nykanen A, Haley B, Zamore PD. ATP requirements and small interfering RNA structure in the RNA interference pathway. Cell. 2001 Nov 2;107(3):309-21.			
	C17	Pandolfi T, Molesini B, Avesani L, Spena A, Polverari A. Expression of self-complementary hairpin RNA under the control of the rrlC promoter confers systemic disease resistance to plum pox virus without preventing local infection. BMC Biotechnol. 2003 Jun 25;3(1):7.			

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				First Named Inventor	Stevenson, Mario
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				Examiner Name	Not Yet Assigned
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	D1	Park WS, Miyano-Kurosaki N, Nakajima E, Takaku H. Specific inhibition of HIV-1 gene expression by double-stranded RNA. Nucleic Acids Res Suppl. 2001;(1):219-20.			Abst
	D2	Park WS, Miyano-Kurosaki N, Hayafune M, Nakajima E, Matsuzaki T, Shimada F, Takaku H. Prevention of HIV-1 infection in human peripheral blood mononuclear cells by specific RNA interference. Nucleic Acids Res. 2002 Nov 15;30(22):4830-5.			
	D3	Pomerantz RJ. RNA interference meets HIV-1: will silence be golden? Nat Med. 2002 Jul;8(7):659-60.			
	D4	Pooggin M, Shivaprasad PV, Veluthambi K, Hohn T. RNAi targeting of DNA virus in plants. Nat Biotechnol. 2003 Feb;21(2):131-2.			
	D5	Pusch O, Boden D, Silbermann R, Lee F, Tucker L, Ramratnam B. Nucleotide sequence homology requirements of HIV-1-specific short hairpin RNA. Nucleic Acids Res. 2003 Nov 15;31(22):6444-9.			
	D6	Roshal M, Kim B, Zhu Y, Nghiem P, Planelles V. Activation of the ATR-mediated DNA damage response by the HIV-1 viral protein R. J Biol Chem. 2003 Jul 11;278(28):25879-86. Epub 2003 May 08.			
	D7	Seo MY, Abrignani S, Houghton M, Han JH. Small interfering RNA-mediated inhibition of hepatitis C virus replication in the human hepatoma cell line Huh-7. J Virol. 2003 Jan;77(1):810-2.			
	D8	Schwarz DS, Hutvagner G, Haley B, Zamore PD. Evidence that siRNAs function as guides, not primers, in the Drosophila and human RNAi pathways. Mol Cell. 2002 Sep;10(3):537-48.			
	D9	Sharp PA, Zamore PD. Molecular biology. RNA interference. Science. 2000 Mar 31;287(5462):2431-3.			
	D10	Shlomai A, Shaul Y. Inhibition of hepatitis B virus expression and replication by RNA interference. Hepatology. 2003 Apr;37(4):764-70.			
	D11	Silva JM, Hammond SM, Hannon GJ. RNA interference: a promising approach to antiviral therapy? Trends Mol Med. 2002 Nov;8(11):505-8.			
	D12	Skipper, M. Interfering with infection. Nature Reviews. 2002. August: 3572-3.			
	D13	Stevenson M. Dissecting HIV-1 through RNA interference. Nat Rev Immunol. 2003 Nov;3(11):851-8.			
	D14	Surabhi RM, Gaynor RB. RNA interference directed against viral and cellular targets inhibits human immunodeficiency Virus Type 1 replication. J Virol. 2002 Dec;76(24):12963-73.			
	D15	Tang H, Peng T, Wong-Staal F. Novel technologies for studying virus-host interaction and discovering new drug targets for HCV and HIV. Curr Opin Pharmacol. 2002 Oct;2(5):541-7.			
	D16	Tenillado F, Diaz-Ruiz JR. Double-stranded RNA-mediated interference with plant virus infection. J Virol. 2001 Dec;75(24):12288-97.			
	D17	Tuschl T. Expanding small RNA interference. Nat Biotechnol. 2002 May;20(5):446-8.			
	D18	Valdes VJ, Sampieri A, Sepulveda J, Vaca L. Using double-stranded RNA to prevent in vitro and in vivo viral infections by recombinant baculovirus. J Biol Chem. 2003 May 23;278(21):19317-24. Epub 2003 Mar 19.			

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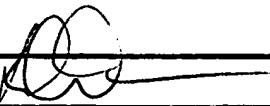
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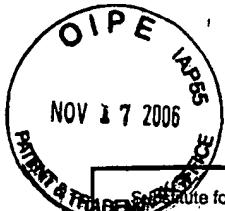
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BS	E1	Vanitharani R, Chellappan P, Fauquet CM. Short interfering RNA-mediated interference of gene expression and viral DNA accumulation in cultured plant cells. Proc Natl Acad Sci U S A. 2003 Aug 5;100(16):9632-6. Epub 2003 Jul 28.			T ²
	E2	Wang X, McLachlan J, Zamore PD, Hall TM. Modular recognition of RNA by a human pumilio-homology domain. Cell. 2002 Aug 23;110(4):501-12.			
	E3	Waterhouse PM, Graham MW, Wang MB. Virus resistance and gene silencing in plants can be induced by simultaneous expression of sense and antisense RNA. Proc Natl Acad Sci U S A. 1998 Nov 10;95(23):13959-64.			
	E4	Wilson JA, Jayasena S, Khvorova A, Sabatinos S, Rodrigue-Gervais IG, Arya S, Sarangi F, Harris-Brandts M, Beaulieu S, Richardson CD. RNA interference blocks gene expression and RNA synthesis from hepatitis C replicons propagated in human liver cells. Proc Natl Acad Sci U S A. 2003 Mar 4;100(5):2783-8. Epub 2003 Feb 19.			
	E5	Winstead, Edward. Silencing Genes in HIV. Genome News Network. June 21, 2002. pp. 1-5. Retrieved from the internet: www.gnn/tigr.org.			
	E6	Yamamoto T, Omoto S, Mizuguchi M, Mizukami H, Okuyama H, Okada N, Saksena NK, Brisibe EA, Otake K, Fuji YR. Double-stranded nef RNA interferes with human immunodeficiency virus type 1 replication. Microbiol Immunol. 2002;46(11):809-17.			
BS	E7	Gene therapy can destroy HIV. October 10, 2002. Retrieved from Internet: www.msnbc.com/news/747082.asp?cp=1.			

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RJ	A1	2004/0096843 A1	05-20-2004	Rossi, et al.	
RJ	A2	2004/0248296 A1	12-09-2004	Beresford, et al.	

FOREIGN PATENT DOCUMENTS					
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RJ	B1	WO 03/023015	03-20-2003	California Institute of Technology	
	B2	WO 03/068797	08-21-2003	City of Hope	
	B3	WO 03/079757	10-02-2003	Massachusetts Institute of Technology / The Center for Blood Research Inc.	
RJ	B4	WO 04/024872	03-25-2004	California Institute of Technology	

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RJ	C1	Qin X, An DS, Chen ISY, Baltimore D. Inhibiting HIV-1 Infection in human T-cells by lentiviral-mediated delivery of small interfering RNA against CCR5. Proc Natl Acad Sci U S A. 2003 Jan 7;100(1):183-188.			

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